

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 3, 2016/2017

### TSR7011- SOFTWARE REQUIREMENTS ENGINEERING

(All sections / Groups)

5<sup>th</sup> JUNE 2017  
8.00pm-10.00pm  
(2 Hours)

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#### INSTRUCTIONS TO STUDENTS

1. This Question paper consists of 4 pages (including cover page) with 4 Questions only.
2. Attempt **ALL** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please print all your answers in the Answer Booklet provided.

**Question 1**

(a) Extreme programming expresses user requirements as stories with each story written on a card. List TWO advantages and TWO disadvantages of this approach to requirements description. (4 marks)

(b) List and describe FOUR possible stakeholders for a national museum information system. (2 marks)

(c) Consider a new sales order system which has these potential sources of system constraints: Operations, Systems, Equipment Budget and Personnel budget. For each of the source, describe the constraint in details with an example for each of them. (4 marks)

**Question 2**

(a) Discover ambiguities or omissions in the following statement of the requirements for part of a drone system intended for search and recovery: (4 marks)

“The drone (an unmanned aerial vehicle) will be very useful in search and recovery operations, especially in remote areas or in extreme weather conditions. It will click high-resolution images. It will fly according to a path preset by a ground operator, but will be able to avoid obstacles on its own, returning to its original path whenever possible. The drone will also be able to identify various objects and match them to the target it is looking for.”

(b) Write a set of non-functional requirements for the drone system, setting out its expected safety and response time. (4 marks)

(c) User interview is one of the most straightforward requirements gathering techniques and can be used in virtually every situation. Identify TWO factors for a successful interview. (2 marks)

*Continued...*

**Question 3**

(a) When emergency changes have to be made to systems, the system software may have to be modified before changes to the requirements have been approved. Suggest a model of a process (with a diagram) for making these modifications that will ensure that the requirements document and the system implementation do not become inconsistent.

(4 marks)

(b) Users and developers are from different contexts and they have different backgrounds, motivations and objectives which may cause communication gap. For the problems stated in the table below, suggest a solution for each of them.

(3 marks)

Problems	Solutions
1. Users do not know what they want, or they know what they want but cannot articulate it.	
2. Users think they know what they want until developers give them what they said they wanted.	
3. Analysts think they understand user problems better than users do.	

(c) Change is a natural part of the process and it comes from both external and internal sources. There's a need for a *process* to manage changes. List down THREE ways to manage the changes more effectively.

(3 marks)

*Continued...*

**Question 4**

(a) The use cases are generated to represent list of functionalities stated in the requirements. Use cases are often written in granular interaction statements. Explain the meaning of use case granularity and how it helps in requirements analysis. (2 marks)

(b) Draw a Use Case Diagram for an online shopping system. Identify at least FOUR main use cases and related actors. Users are able to search and view items before making any purchase. (4 marks)

(c) Based on the Use Case Diagram drawn in (b), draw an Activity Diagram. Some of the activities of the process include browsing and searching the store and finally to check out the cart. (4 marks)

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